



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,287	01/14/2002	Masakazu Ogasawara	041514-5212	5436

9629 7590 01/12/2005

MORGAN LEWIS & BOCKIUS LLP  
1111 PENNSYLVANIA AVENUE NW  
WASHINGTON, DC 20004

EXAMINER
----------

AGUSTIN, PETER VINCENT

ART UNIT	PAPER NUMBER
----------	--------------

2652

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/043,287

Applicant(s)

OGASAWARA ET AL.

Examiner

Peter Vincent Agustin

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9-14 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 4-8 and 15-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 12 & 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Noda et al. (hereafter Noda) (US 5,123,003).

In regard to claim 1, Noda discloses an optical pickup device (figure 2) driven by an error signal comprising: a grating element (8) for receiving a light beam to create zero order diffracted light,  $\pm$  first order diffracted light and  $\pm$  second order diffracted light when the light beam passes through the grating element; an optical system (9 & 10) for focusing the zero order,  $\pm$  first order and  $\pm$  second order diffracted light on a recording surface of an optical recording medium (1) so as to form a spot of the zero order diffracted light (figure 6, element 4) on a first track (2b) extending on the recording surface, spots of the  $\pm$  second order diffracted light (5m & 5n) on tracks (2a & 2c) adjacent to the first track, and spots of the  $\pm$  first order diffracted light (5a & 5b) between the spot of the zero order diffracted light and the spots of the  $\pm$  second order diffracted light; and an optical detector (13) having first to fifth independent light-receiving elements (figure 7), the first light-receiving element (13A-13D) being adapted to receive returning light from the spot of the zero order diffracted light, the second (13E) and third (13F) light-receiving elements being adapted to receive returning light from the spots of the  $\pm$  first order diffracted light, and the fourth (13G) and fifth (13H) light-receiving elements being adapted to receive

Art Unit: 2652

returning light from the spots of the  $\pm$  second order diffracted light, to produce output signals used to create an error signal.

In regard to claim 2, Noda discloses that the first light-receiving element (figure 7, elements 13A-13D) includes four independent light-receiving portions adjacent to each other and partitioned by two division lines intersecting each other perpendicularly, one of the division lines being parallel to a track extending direction.

In regard to claim 12, Noda discloses an apparatus (figure 2) comprising: means for receiving (8) a light beam from a light source (6) to create zero order diffracted light,  $\pm$  first order diffracted light and  $\pm$  second order diffracted light; means (9 & 10) for focusing the zero order,  $\pm$  first order and  $\pm$  second order diffracted light on a recording surface of an optical recording medium (10) so as to form a spot of the zero order diffracted light (figure 6, element 4) on a first track (2b) extending on the recording surface, spots of the  $\pm$  second order diffracted light (5m & 5n) on tracks (2a & 2c) adjacent to the first track, and spots of the  $\pm$  first order diffracted light (5a & 5b) between the spot of the zero order diffracted light and the spots of the  $\pm$  second order diffracted light; and means (13) having first to fifth light-receiving means (figure 7), the first light-receiving means (13A-13D) being adapted to receive returning light from the spot of the zero order diffracted light, the second (13E) and third (13F) light-receiving means being adapted to receive returning light from the spots of the  $\pm$  first order diffracted light, and the fourth (13G) and fifth (13H) light-receiving means being adapted to receive returning light from the spots of the  $\pm$  second order diffracted light, to create output signals used to prepare an error signal to drive the apparatus.

In regard to claim 13, Noda discloses that the first light-receiving means (figure 7, elements 13A-13D) includes four independent light-receiving portions adjacent to each other and partitioned by two division lines intersecting each other perpendicularly, one of the division lines being parallel to a track extending direction.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda as applied to claims 1 & 12 above, and further in view of Iida (US 6,545,959).

For a description of Noda, see the rejection above. However, Noda does not disclose that each of the second to fifth light-receiving elements/means includes at least two independent light-receiving portions adjacent to each other and partitioned by a division line extending substantially parallel to a track extending direction.

Iida discloses in figure 10 second (PD5 & PD8), third (PD6 & PD7), fourth (PD9 & PD10) and fifth (PD11 & PD12) light-receiving elements/means, each one including two independent light-receiving portions adjacent to each other and partitioned by a division line extending substantially parallel to a track extending direction. It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have used the partitioned second to fifth light-receiving elements of Iida with the optical detector of Noda, the motivation being to provide a more accurate detection of the tracking error signal.

Art Unit: 2652

5. Claims 9 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda as applied to claims 1 & 12 above, and further in view of Alon (US 5,959,953).

For a description of Noda, see the rejection above. However, Noda does not disclose a crosstalk cancellation circuit/means connected with the first, fourth and fifth light-receiving elements for reducing an amount of crosstalk in the output signal from the first light-receiving element and originating from signals from adjacent tracks, based on the output signals from the fourth and fifth light-receiving elements.

Alon discloses a crosstalk cancellation circuit (figure 7) for reducing an amount of crosstalk in an output signal from a first light-receiving element (figure 3A, element 50) and originating from signals from adjacent tracks, based on the output signals from fourth (53 or 55) and fifth (54 or 56) light-receiving elements (see also column 10, line 58 thru column 11, line 17). It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have added the crosstalk cancellation circuit of Alon to the device of Noda, the motivation being to compensate for crosstalks resulting from magnification errors caused by track pitch variations.

6. Claims 10, 11, 19 & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda as applied to claims 1 & 12 above, and further in view of Imada et al. (hereafter Imada) (US 5,404,344).

For a description of Noda, see the rejection above. However, Noda does not disclose an optical element/astigmatic means for astigmatizing at least the returning light from the spot of the zero order diffracted light.

Imada discloses an optical element (figure 2, element 7) for astigmatizing a returning light from the spot of a zero order diffracted light (see elements 8 & 9). Furthermore, Imada discloses that the optical element/astigmatic means is a cylindrical lens positioned in an optical path of the returning light of the zero order diffracted light such that a center axis of the cylindrical lens extends at an angle of 45° to a track extending direction on the optical recordation medium (column 4, lines 10-30). It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have added the astigmatic element of Imada to the device of Noda, the motivation being to provide astigmatism necessary to detect an error signal.

#### ***Allowable Subject Matter***

7. Claims 4-8 & 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See the previous Office Action for reasons for the indication of allowable subject matter.

#### ***Response to Arguments***

8. Applicants' arguments, see pages 4-5, filed October 4, 2004, with respect to the drawing objections have been fully considered and are persuasive in light of the presented Exhibit A. The objection to Figures 2 & 3 has been withdrawn.

9. Applicants' arguments filed October 4, 2004, with respect to the rejected claims have been fully considered but they are not persuasive.

10. In regard to page 6, paragraph 3 thru page 7, paragraph 1, the applicants argue that Noda does not anticipate the combinations recited in independent claims 1 & 12. In particular, the

Art Unit: 2652

applicants argue that Noda clearly teaches away from any suggestion of using the  $\pm$  second order diffraction lights, and therefore, Noda does not show, or even suggest the recited combinations and thus cannot anticipate the claimed embodiments of the invention. The examiner disagrees. Noda does not “teach away” from using the  $\pm$  second order diffraction lights. Column 4, lines 1-2 clearly state that “light spots 5m and 5n due to the  $\pm$  2nd-order diffraction lights are also produced”. The statement on column 4, lines 3-5 that “since [the  $\pm$  2nd-order diffraction lights] have no particular relation with the present invention, the explanation thereof will be omitted” does not prove that Noda teaches away from using the  $\pm$  second order diffraction lights, as argued by the applicants. Claim 1 only requires the claimed grating element to create zero,  $\pm$  first and  $\pm$  second order diffracted lights, which requirement is met by the Noda reference as noted on item 2 above.

11. In regard to page 7, paragraph 3, the applicants assert that dependent claims 2-11 and 13-20 are allowable because of the dependence from their respective independent claims 1 or 12. The examiner disagrees for the reasons provided on item 10 above.

### *Conclusion*

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37



Art Unit: 2652

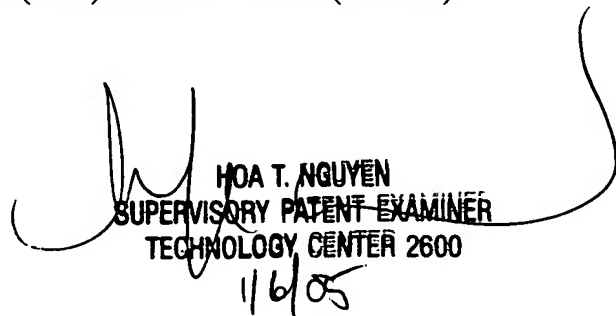
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Vincent Agustin whose telephone number is (703) 305-8980. The examiner can normally be reached on Monday thru Friday 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter Vincent Agustin  
Art Unit 2652

  
HOA T. NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600  
11/6/05